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**REMARKS**

By virtue of this Amendment, claims 1 and 38 have been amended to limit the core to a metal or metal-containing compound selected from the group consisting of aluminum phosphate, bismuth oxide, iron II oxide, iron III oxide, silver, silver oxide, titanium oxide, zinc, zinc selenide and zirconium oxide.

The amended claims 1 and 38 are supported by the originally filed application. Specifically, column 2 of Table 2 discloses that the compounds recited in the Markush group are suitable core compounds. Column 3 of table 2 discloses that sodium pyrithione is used to prepare the composite particles according to the invention. The specification discloses further at the paragraph bridging page 9 and page 10, particularly at page 10, line 6, that the other pyrithiones such as potassium pyrithione can be used. Accordingly, instant claims 1 and 38 are supported by the originally filed application.

In addition, claims 40, 41 have been amended to limit the core material to zinc and zinc selenide. Claim 50 has been amended to limit the soluble pyrithione used to form composite particles to sodium pyrithione. Claims 51-52 are newly added. Support for new claim 52 may be found at page 10, lines 10 and 11. Support for new claim 51 may be found at page 7, lines 21 and 22 of the originally filed application.

Claims 42 and 46 are cancelled. Following the entry of the amendment, claims 1, 38, 40, 41 and 50-52 are pending for examination. Applicants respectfully submit that no new matter is added herein.

**Rejections under 35 USC §102**

Claims 1, 40, 42 and 46 stand rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 5,916,947 to Morris, et al.

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Morris, et al. discloses a particle mixture in powder or slurry form comprising zinc oxide and a photosensitizer, wherein zinc oxide is in photoelectric proximity to the photosensitizer. (Col. 2, lines 42-52). The photosensitizer could be zinc pyrithione (hereafter ZPT). Morris et al. discloses further in claim 15 that the photosensitizer is surface coated onto zinc oxide by mixing the photosensitizer and zinc oxide in solution.

By this Amendment, claims 42 and 46 have been cancelled, thus rendering the rejections as applied to these claims moot.

Claim 1 has been amended to limit the core to aluminum phosphate, bismuth oxide, iron II oxide, iron III oxide, silver, silver oxide, titanium oxide, zinc, zinc selenide and zirconium oxide. Claim 40 depends from claim 1 and the core material recited therein has been limited to zinc or zinc selenide. After these amendments, the core materials as recited in instant claims 1 and 40 no longer include zinc oxide.

As discussed above, Morris et al. is focused on modifying zinc oxide with photosensitizers. Nowhere in Morris et al. does the reference disclose or suggest modifying any compounds other than zinc oxide with a photosensitizer even for patentee's purpose. Accordingly, Morris et al. does not disclose or suggest any composite particles having a core of aluminum phosphate, bismuth oxide, iron II oxide, iron III oxide, silver, silver oxide, titanium oxide, zinc, zinc selenide, and zirconium oxide, much less a biocidal composition containing composite particles as recited in instant claims 1 and 40. Therefore, it is respectfully requested that the rejection be withdrawn.

#### Rejection under 35 USC § 103

Claims 1, 38, 40, 41, 42, 46 and 50 were rejected under 35 U.S.C. 103(a) as being obvious over Morris et al. (US Patent No. 5,916,947) in view of Kappock et al. (US Patent No. 5,518,774).

#### Claims 42 and 46

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Claims 42 and 46 have been cancelled, thus rendering the rejection as applied to these claims moot.

Claims 40, 41 and 50

Claims 40, 41 and 50 are directed to compositions containing composite particles having a core consisting of zinc or zinc selenide.

Morris et al. has been discussed above in the context of 102(e) rejection. Morris et al. does not disclose or suggest any composite particles having a core of zinc or zinc selenide.

Kappock et al. discloses an aqueous coating composition comprising (a) water, (b) a base medium; (c) a zinc compound selected from the group consisting of zinc oxides, zinc hydroxide, zinc salts, and combinations thereof. See Kappock et al., column 1, lines 35-48.

Applicants respectfully submit that a person skilled in the art would readily understand that zinc salts disclosed in Kappock et al. do not encompass zinc or zinc selenide. In fact, Kappock et al. is completely silent regarding the use of zinc or zinc selenide for any purposes. Accordingly, Kappock et al. does not disclose or suggest any composition containing zinc or zinc selenide, much less a composite particle having a core of zinc or zinc selenide.

Applicants respectfully submit that the combination of Morris et al. and Kappock et al. does not disclose or suggest the subject matter as recited in claims 40, 41 and 50 because the combination does not disclose any composite particles having a core of zinc or zinc selenide, much less a composition containing such composite particles as recited in instant claims 40, 41 and 50. Accordingly, the rejection as applied to claims 40, 41, 50 and 51 are untenable and should be withdrawn.

Claims 1 and 38

Claims 1 and 38 are directed to a composition containing composite particles containing a shell and core, where the core consisting essentially of a metal or metal-containing compound selected from the group consisting of aluminum phosphate, bismuth oxide, iron II oxide, iron III oxide, silver, silver oxide, titanium oxide, zinc, zinc selenide and zirconium oxide; and where the

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shell consisting essentially of a metal pyrithione formed by a transchelation reaction of sodium pyrithione or potassium pyrithione with a portion of the metal or metal-containing compound of the core.

As discussed above, Morris et al. discloses zinc oxide coated with photosensitizers including zinc pyrithione. However, Morris et al. fails to disclose or suggest coating any materials other than zinc oxide. In fact, Morris et al. implicitly teaches away from coating materials other than zinc oxide with zinc pyrithione.

As disclosed at column 1, lines 62-64, Morris et al. is concerned with utilizing visible light to photochemically synthesize hydrogen peroxide by in situ reduction of oxygen on zinc oxide. According to Morris et al., photosensitizer, such as zinc pyrithione, is able to absorb visible light and catalyze the production of peroxide when in contact with ZnO, water, O<sub>2</sub> and visible light. It thus can be inferred from this disclosure, that the presence of zinc oxide and a photosensitizer is required for the production of hydrogen peroxide by utilizing visible light. In view of this teaching, a person skilled in the art would not be led or motivated to replace zinc oxide with zinc, zinc selenide, or any other core materials as recited in the instant claims 1 and 38.

Kappock et al. discloses a coating composition containing soluble pyrithione salt, such as sodium pyrithione and a metal-ion source. The reference is not concerned with generation of hydrogen peroxide. Kappock et al. does not disclose or suggest any composite particles having a core and shell, much less a composition containing such composite particles as recited in instant claims 1 and 38.

The combination of Morris et al. and Kappock et al. does not disclose or suggest the instantly claimed invention, because the combination would suggest a composition containing zinc oxide coated with zinc pyrithione, a metal ion source, and a soluble pyrithione, such as sodium pyrithione, which is nothing like the instantly claimed invention. Therefore, applicants respectfully submit that the rejection has been overcome.

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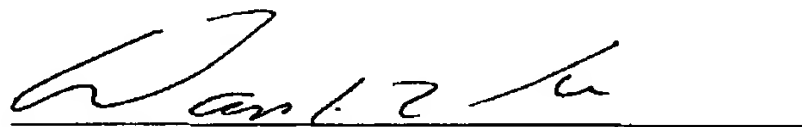
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In view of the above, it is believed that the instant claims are in condition for allowance. Therefore, Applicants respectfully request consideration of the amended claims, and an early receipt of a Notice of Allowance of the claims as amended.

Any fees due with this Reply may be charged to Deposit Account **23-1665** under Customer Number **27267**.

Respectfully submitted,  
David Gavin et al.

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